Publicly Funded Mental Health Services in Durham County, North Carolina: An Analysis of the System, Who It Serves, and Recommendations for Improved Access for Adults suffering from Severe and Persistent Mental Illness

By

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Abstract

State-funded mental health support for adults living within Severe and Persistent Mental Illness (SPMI) is chronically underfunded and unaccountable to the patients that it serves. Like in many parts of the country, the true costs of these gaps in coverage fall on other social systems such as emergency medicine and the justice system, failing to efficiently spend tax payer money. There are a number of steps that can be taken, specific to Durham County, in order to reconcile these shortcomings and best provide financially and socially responsible services to adults with SPMI. Most significant, State and Federal budgets should be committed in a way that allows for long-term planning on the part of service providers. It is also recommended to increase the allocations of funds that support long-term care, as well as research that supports transparency in outcomes and early diagnostics and intervention. Additionally, social programs that raise awareness of mental illness to reduce stigma, educate the public on treatment options, and help support the affected community, should be expanded upon to ensure that adults with SPMI in Durham are supported in the same manner as other health conditions.

Introduction

Across the country there is a shortage of mental health professionals in the United States, and the situation is particularly dire in underserved parts of the country. Add to this the fact that funding for community resources, such as inpatient psychiatric beds and long-term behavioral health facilities, has been shrinking for decades; and it is not hard to imagine why the issue of access has become problematic for many who are in urgent need of psychiatric attention. While Durham County is home to some of the best hospitals in the country, including the Duke Hospital system, there remain populations in need of mental health services that go

unserved, as well as concerns regarding the quality of care received by those able to utilize the system.

An analysis of the current mental health system, specific to Durham County, would be beneficial toward best utilizing the resources available and improving access to mental health services for underserved and at-risk populations in the community. One of the populations most at risk are adults suffering from Severe and Persistent Mental Illness or SPMI. There are several factors that make them high risk including complexity of case, lack of support system, and inability to navigate the mental health network [21, 30]. For these reasons and others, those with SPMI have higher rates of readmission, as well as much higher rates of many physical ailments [23, 48]. For example, those diagnosed with depression confers a 24% increased risk of dying within the next 6 years and depression itself increases the risk of infarction by 12%[48]. Nutritional and metabolic diseases, cardiovascular diseases, viral diseases, respiratory tract diseases, musculoskeletal diseases, sexual dysfunction, pregnancy complications, and possibly obesity-related cancers are, more prevalent among people with SPMI when compared to the general population [21]. These higher rates can be attributed to both lifestyle and factors related to their long term mental health treatment. Additionally, there is evidence to suggest that adults with SPMI receive standard of care treatment at a lower frequency than the general population for the same physical ailments[21].

Through literature review, as well as peer interview with professionals in the mental health arena, the goal of this research is to acknowledge where progress is being made in providing quality Government funded access to mental health services for adults living with SPMI, while

identifying opportunities for improvement, and ultimately to suggest a path forward for the most efficient and impactful improvements to the mental health support system.

In order to provide these recommendations for actions moving forward, we must first measure the status of the current system. Fortunately, there is much interest in the public health sector for tracking and understanding the metrics that are essential toward grading the state-funded Mental Health Services available to Durham residents.

Durham is a diverse, well educated, and prospering centrally located mid-size city in North Carolina with a population of approximately 280,000 residents. Identified race/ethnicity within the city is 54% White, 39% African American, 13% Hispanic, 6% Asian, 1% American Indian, and 3% Other/Mixed Race[1]. Nicknamed the “City of Medicine”, Durham has fostered an educated population through a large network of above average achieving schools - Durham Public Schools operates 46 public schools, the eighth largest school district in North Carolina[2] and an internationally acclaimed scholarship and research in Duke University[2]. The result is 86.9% of residents holding at least a high school diploma and 45.1% holding at least a bachelor’s degree compared to North Carolina overall, with 84.9% of North Carolinians holding high school diplomas and 27.3% holding at least a bachelor’s degree. The median income for a household in the city was $51,853, compared to NC overall at $46,334 while at the same time about 18.5% of the population was below the poverty line, including 24.3% of those under age 18 and 10.1% of that age 65 or over[1]. Overall Durham has grown into a very good place to live, ranking as one of the "Top 20 Places to Educate Your Child”, #4 on the list of most livable cities in the United States, and #10 on the list of the Best Places for Business and Career[3-5]. This may explain why

Durham is the 46th fastest growing city in the US and the 2nd fastest growing city in North Carolina[1].

However these positives cannot overshadow the marginalized populations of Durham, mainly the number of uninsured, and specifically those at-risk individuals without quality access to Mental Health Services. It is estimated that 47,620 adults (~23%) and 6,082 children are uninsured in Durham, proportions which are considered “mid-high” and “high”, respectively, by the North Carolina Institute of Medicine[7]. The numbers are even more striking when viewed by ethnicity, with 52% of Hispanics reportedly uninsured, suggesting that undocumented residences are much more likely to be uninsured. These numbers include the number of residence that receive state-funded healthcare through Medicaid. According to the NC State Office of Budget and Management, 16% of Durham County residence, some forty-one thousand, received Medicaid benefits, which is slightly lower than the State average of 17%[22]. That withstanding, data supports the difficulty in obtaining quality mental health care for even the insured. Durham county hospital admissions showed that nearly half of all admissions (49%) could have been preventable through outpatient care and 16% of Durham residence reported that they could not see a doctor when needed because of cost[6].

North Carolina ranks 22nd in the number of poor mental health days (2.8 days annually) with 17% of Durham residents reported having been diagnosed with a depressive disorder[9]. Additionally, the number of substance related visits to the emergency department have increased over the past five years for both adults and those under eighteen, 7% and an alarming 36%, respectively[10].

Meanwhile the North Carolina General Assembly has been cutting mental health funding, a staggering 110 million dollars just last year[15]. With these gaps in funding, and unknown allocations to future budgets, the entire mental health community of North Carolina may find it difficult to provide the current level of services, let alone expand or improve upon services offered[16]. Add to this the number of high profile local news stories related to those suffering from mismanaged mental health issues that resulted in tragic results and it's not hard to see why there is concern within the community regarding access to quality Mental Health Services[11-13]. For these reasons, it is of particular importance that an in-depth analysis be conducted for this particular area. While the goal of such an analysis is to improve service and access, it may also help serve to lessen the sting of budget shortfalls through more efficient use of available resources.

Methodology

To establish a baseline for the current status of State-funded Mental Health Services in Durham, and then provide recommendations on ways to improve access to quality care, it was necessary to conduct a literature review as well as interviews with several key informants. Each of the articles reviewed was thorough in examining its topic, but it is important to recognize that each was initially undertaken for different reasons than this analysis and with different audiences in mind. Therefore it is reasonable to believe that the associated recommendations of these articles are targeted toward specific, sometimes incompatible, audiences. This analysis attempted to find common themes and recommendations among the literature that could be knit together into a framework that would form a more complete and comprehensive foundational strategy to support state-funded mental health in Durham County.

The literature review portion of research was conducted in December of 2015 and results were categorized, refined and scored in early 2016. To conduct the literature reviews The University of North Carolina Library System was utilized. Within this system the databases of Google Scholar, Articles + and Pub Med were accessed with the following terms searched: State-funded Mental Health Access, Durham [North Carolina] Mental Health, Underserved Population Mental Health Services, North Carolina State-funded Mental Health, Improving Mental Health Services, Improving Services for Serious and Persistent and Mental Illness. Database mining was completed on November 24th, December 8th, 2015, and January 26th, February 5th, 2016. These mining efforts resulted in findings within each journal that numbered several hundred articles. To refine these results for those that would be related to the research focus, further refinement of the search criteria was completed which included narrowing the article publishing date to include only those authored within the past five years. This had the added benefit of compiling only results with the most up-to-date metrics.

In order to categorize and then later score the findings from the refined search results, it was necessary to develop a matrix where results could be tracked and to determine the possible fields in which each article could be assigned. Based on the structural needs of the analysis, categories were established to both ensure refinement of search results and to further define the research focus. These categories include defining the issue and study population, improving utilization, improving quality of care, and special issues of adults with SPMI (Appendix B).

Once articles were categorized, each was given a score based on its relevance to the research topic and by the impact of its content. These are inherently subjective measures and scaling them into a 1-10 metric can be challenging. For this reason it was important to establish as

many defining characteristics of an article that would be deemed “high scoring”. Scoring for relevance was mainly based on whether the article’s topic fell within one of the specified refined search categories listed above, giving additional weight if it was relevant to North Carolina, or more specifically to Durham County.

Scoring for impact was based on the reputation of the article author(s), with more established research institutions given higher marks. Articles were given additional weight for having the backing of major name recognition, and slightly greater scrutiny was placed on articles without such support before providing high marks for their impact. The highest scored articles for impact were those that provided the most in-depth and well-established statistically driven recommendations and suggestions for improvement toward its particular topic.

In order to provide the most complete picture of Durham’s mental health services, and specifically those that are publicly funded, it was critical to receive input from key informants within the community. For the purposes of the literature review this meant ensuring that people from as many different aspects of the mental health service spectrum were included. Confidential interviews were conducted with program administrators, staff of service providers, and residents within the community that receive mental health services. Selection of interviewees was based on the informants’ role in mental health, experience within the field, and in some cases availability. The personal and professional perspective of these key informants provided insights on how the system “really works” in Durham County and were beneficial, along with supporting literature, toward drafting community specific conclusions on the state of mental health services, as well as recommendations on how to improve them.

Interviews with key informants of the Mental Health field were conducted in early 2016 either over the phone or, when possibly, in-person. Interviews were scheduled to last approximately 30 minutes though no time limit was placed on the duration. A script was followed for the questions that would be asked of all participants with questions designed to be open ended (Appendix A). Along with the content remaining confidential, the open ended nature of the interview questions was intended to elicit interviewees' honest assessment of the Mental Health field, both overall, and within Durham County. The input received from the interview process was then tracked and scored with the same criteria as the literature review, providing the overall highest scoring to the most relevant and impactful. This was, in part, accomplished by considering the expertise of the particular interviewee and the topic or population they best represented within the mental health service community.

Literature Review

State-funded Mental Health Service in Durham County

Partnership for a Healthy Durham has made Mental Health and Substance Abuse, one of six health priorities for the city to focus on over the next three years, along with Access to Medical and Dental Care, HIV and Other STDs, Obesity and Chronic Illness, Poverty, and Education[14]. In order to make these health areas topics of priority there must be an increased awareness for the support needs. There are a number of services provided by the State, which range from community support, outpatient therapy, and substance abuse treatment[30]. These services are provided to individuals that qualify through the Medicaid program with Durham County alone having over nineteen thousand people within the program utilizing mental health services[22].

This partnership provides services based on evidence-based practices to assure the highest quality possible, while also demonstrating proven treatment outcomes that align with the population that is being served. There are services that have been long standing as evidence-based practices, such as Comprehensive In-Home care, while others require some form of independent monitoring to assure they meet the necessary quality standard [52, 55].

Along with the more traditional services provided, there is also an out of network group of providers that is provides services that are not available through the immediate managed care options. Organizations such as Alliance Behavioral Healthcare partner with these out of network groups, due to location, to set-up care options for services once they have been determined to be medically necessary. This system allows for areas with less access and resources to provide a greater range of services at an ad hoc basis, with the intention being that they are both available but also operating financially lean [18, 52].

Factors Linked to State-funded Mental Health Services for Adults with SPMI

In recently available data, North Carolina showed the greatest improvement in public health rankings, jumping to 31st from a previous mark of 37th overall[8]. This ranking remains far from exceptional but shows great promise for the general health of North Carolinians. These results were due to improvements in immunization among children, a decline in physical inactivity, and lower incidence of salmonella infection [20, 25].

Unfortunately, while public health has improved, the system of mental health services and its affiliated measures have declined [10]. For example, in the past decade deaths associated with prescription drugs were up 75%, and those associated with alcohol were up 30%[10]. State data show that only a small proportion of those needing treatment for mental health and substance

abuse receive it, partially because the mental health and substance abuse treatment services available are not adequate to meet the need [10, 17]. In a 2014 study, it was estimated that over 17,000 residents needed mental health treatment and 19,000 needed substance use treatment. The same study found that when polled, Durham residence indicated that substance abuse was the #1 health concern for all residents, and especially within the Latino community, with 44% of respondents indicating it as their highest concern [10].

Part of the reason why adults suffering from SPMI do not receive the necessary treatment for their conditions is the presence of complicating cofactors to their health [21]. These could range from a sustained lack of social support, any number of physical ailments, such as obesity, cardiovascular disease, and certain types of cancer that occur at higher rates in the SPMI population, substance abuse, and homelessness[23, 31, 48]. Largely due to these treatable medical conditions, adults in the U.S. living with serious mental illness die, on average, 25 years earlier than others[23]. These same factors of homelessness, cognitive disorganization and poor social support also affect the ability of people with SPMI to obtain and retain benefits, such as Medicaid. The inability to secure benefits then feeds into a spiral of lack of treatment and worsening conditions [21].

One particularly effective measure of effective mental health treatment of the population as a whole is the average number of poor mental health days that are reported in the past 30 days [6]. These days would include days affected by things like depression, anxiety, and stress that adversely impact someone's daily routine like going to work, school, or caring for their family. As one might expect, adults living with SPMI are much more likely to have poor mental health days. Whereas the average North Carolinian has an average of 3.6 poor mental health days,

ranking the state 22nd nationally, adults with SPMI indicated having nearly three times as many poor mental health days than the non-SPMI population[25]. This fact alone indicates that there is a gap in effective coverage for this at risk population. The previously mentioned correlation between poor mental health and comorbidities suggested that the issue is much larger than mental health support.

Like all members of the community, SPMI-affected individuals are part of a greater social structure that determines their health through various factors such as where they live, the education they receive and employment opportunities. It's well documented that these factors correlate to ones' health. Specifically, those individuals with higher incomes, more years of education, and a healthier and safer environment have better health outcomes and generally have longer life expectancies [20]. This dynamic affects the SPMI population when they are not supported with the necessary treatment support, thus essentially funneled into poorer health outcomes by being limited in their opportunities to live within the structure of a public health framework that supports them being healthy and productive members of society.

The Importance of State-funded Mental Health Services for Adult with SPMI

As it was previously mentioned, individuals living with serious mental illness face an increased risk of having chronic medical conditions and although short periods of relapse or distress may be unavailable, more serious occurrences, especially those that are longer term, are preventable. Both the CDC and Healthy People 2020 have listed mental health related objectives in the top public health priorities[33, 34].

With only 41% of adults in the nation receiving the mental health services they need, and those affected by SPMI only receiving treatment 62.9% of the time, there are real social concerns

beyond the immediate impact of those that do not receive the necessary treatment, especially those affected by SPMI[24, 27, 49]. Comprehensive mental health services go beyond providing emergency interventions. Long term managed care for those affected by SPMI could include any number of services such as on-going counseling, medication review/monitoring, job placement assistance and housing assistance [22, 53].

For those individuals suffering from mood disorders the risks are quite high resulting in hospitalizations and suicide. Conditions such as depression and bipolar disorder are the third most common reason for hospitalization among adults, both nationally and within North Carolina[35]. For the general population, suicide is the 10th most common cause of death, and even higher for younger adults. For young adults that commit suicide, greater than 90% have a mental condition[26].

These tragically high rates of poor outcomes can be managed with appropriate care, which in the case of depression or bipolar disease would likely include on-going counseling and medication. Recovery and independence for adults with SPMI is achievable, but most expediently with sufficient services and support [24, 31]. The impact on the community can be quite severe. A lack of funding for the necessary mental health services merely shifts the responsibility for care from trained mental health professionals to the emergency rooms and law enforcement agencies of the community [15, 18, 20]. This shift in responsibility can have potential impacts on the public health of both the SPMI community, as well the greater population. With health and safety resources tied up serving those left without long term mental health treatment, the impact can be significant. That said, not only are those with SPMI shown to be no more violent than the general population, they are more likely to be the victims

of violence, rather than the aggressor [28]. In fact, people with severe mental illnesses, schizophrenia, bipolar disorder or psychosis, are 2.5 times more likely to be attacked, raped or mugged than the general population[27]. However, media does not represent the SPMI community in this light [39, 49]. Often those affected by SPMI are labeled as dangerous, without value, and a social burden. This bias against the SPMI community only further supports the funding cuts that create gaps in coverage, thus pushing more individuals that would otherwise have manageable conditions into the emergency medicine and criminal justice pipelines [40, 41, 55].

Financing State-funded Mental Health Services

While state-funded Medicaid is a large expense on the budget, approximately twelve billions dollars, the costs for untreated mental health are even more significant [22, 38]. While the United States spends some 475 billion dollars on Medicaid, it's estimated that another 300 billion dollars are spent in direct and indirect costs for untreated mental illness[36]. These costs come in the form of preventable hospital visits, emergency care, and avoidable intervention by the justice system, as well as lost productivity. The cost of mental health in the United States has only increased in recent years as well, up more than 100 billion dollars in the last decade[29, 36]. The overall cost per patient within the mental health support arm of the Medicaid program in Durham County ranges from approximately $900 to over $12,000 annually[22]. These costs are approximately the same as the overall State costs for patients with similar conditions. For some, the publicly funded financial burden may seem a high cost; however, when placed next to the even higher cost, both financial and social, of a lack of treatment, the alternatives seem much less appealing. For instance, the low-end cost of housing an inmate in a North Carolina

prison is approximately $23,000 annually. When close contact supervision is required this balloons to over $35,000 annually[29].

For many of those living in Durham with SPMI, the State general funding for mental health is the only support they can look to potentially receive. Durham County spends an average of over $6,000 per Medicaid recipient, totaling over 117 million dollars annually, for mental health services alone (Appendix C). Medicaid is not an option for some because they are not poor enough and do not quality. This is often because, although they are well below the poverty line, they make slightly too much money to qualify for assistance. For example, the median income limit for parents in 2016 is just 44% of poverty, or an annual income of $8,840 a year for a family of three, and childless adults remain ineligible [37, 57]. Across North Carolina some 230,000 people fall into this gap where they cannot qualify for Medicaid but also do not make enough to take advantage of the Affordable Care Act [57]. Another common reason for not receiving Medicaid support for those with SPMI are the debilitating effects of their conditions that can make it impossible for them to take the necessary steps to quality[32]. Although many mental health services are covered under Medicaid, some keys support is not, such as inpatient psychiatric care. These additional gaps in coverage under Medicaid particularly affect the adult SPMI population, as they are more likely to need these more intensive resources[29, 32, 34].

Government Role in State-funded Mental Health Services for Adults with SPMI

Funding being static has a great influence on both the available services to those affected by SPMI, as well as the quality of care that is provided. Recently there have been cuts to mental health budgets in North Carolina even as demand for services has increased [18, 31]. While Durham County was less affected by the “Great Recession”, there remains a subset of the

population vulnerable. Those left unemployed and without health insurance have had to rely on public assistance for mental health services, further taxing an already stressed system[37]. Especially during the economic recovery, demand for mental health services rose due to increased stress from job loss, financial pressure and self-medication in the form of substance abuse [7, 38]. This included everything from crisis services to long-term case. In short, the role of government in providing mental health services has never been greater. At the same time, State-funded mental health services have either remained at the same levels or retracted. The following are specific services affected by State and Regional funding, including those that are most essential for supporting adults living with serious mental illness. These include:

- Long-term hospitalization
- Intensive case management
- Access to medication
- Emergency intervention programs
- Housing support[18]

Reductions in staff, the inability to provide some services, as well as employee support and caseload management, have all been issues facing the state-funded mental health services in Durham. These immense pressures on the system have also created an increased focus on the adopting of managed care systems to control spending within Medicaid[38]. Managed Care has gained support for its focus on the use of evidence-based services in mental health programs which, in theory, provide a higher level of accountability through a proven track record and ongoing data collection. The main focus of Managed Care is cost saving. Services such as long term care that involve higher cost care that is necessary for those with SPMI, are inherently more vulnerable. Cone Health Foundation, Kaiser, and NAMI all agree that if Managed Care continues to be a focal point of the State-funded programs it needs to be implemented with

care to ensure that the SPMI population continues to receive the inpatient and community service programs they rely on [18, 37, 52].

Applying Mental Health Services to the Public Health Field

Mental health services can operate under the same principles of the evidence-based public health framework model (Appendix D). Like in the general model, it starts with a community assessment, understanding that while there much to learn from previous experience, no two places will be identical in their issues and community dynamics. Following the public health approach means then quantifying the issue(s), creating a statement identifying the issues, determining what is known via scientific literature about the issues, creating and prioritizing program options for implementation, developing the action plan for execution and rollout, and evaluating the program as it progresses [59]. This public health approach module is cyclical and adapts for the community it serves as the issues facing the community evolve. A successful mental health program can implement this same public health model.

Under this framework there are a number of programs that have been developed within the region that are aimed at providing better support for mental illness. These programs are often collaborative approaches between Management Care operations and publically-funded institutions with government oversight. The goal is to improve quality care through specialized programs that meet the needs of a particular sub-set of the mental health population. These include DHHS programs such as Transitions to Community Living, The Crisis Solutions Initiative, and the coordination and integration of physical and behavioral health care. These initiatives are all based on MAPP, or Mobilized for Action through Planning and Partnership. MAPP is a tool communities use in order to improve health by strategically planning their initiatives. This

is accomplished by following a series of steps which include establishing a shared community vision through open dialogue, ongoing data collection, strategic thinking, and the celebration of successes among all stakeholders [58].

For adults living with SPMI in Durham, finding and keeping employment and housing can be quite challenging. Many of those affected by mental illness, especially SPMI, have barriers toward employment and housing such as a criminal record or bad credit[45]. For this reason there is a state-funded program, run by local managed care, which specifically assists individuals with SPMI in finding affordable housing within the community. While the program has helped several hundred people it has its limitations. These include the program resources available but also the lack of affordable housing in the community[46].

The Crisis Solutions Initiative is a program that links work groups from across the state and region together for opportunities to optimize their crisis responses. For Durham County, this collaborative brings teams from the surrounding counties, as well as area stakeholders like hospital staff and law enforcement, together for an opportunity to improve the crisis response system. One result of this has been improved procedures and policies for Durham paramedics, providing them alternative drop-off options and funding to transport and divert from emergency rooms[47].

Given what we already know about poor health outcomes for adults suffering from SPMI, there is a great need for integrated care, joining together the behavioral healthcare they receive with physical care. Durham has some programs that attempt to support this type of care such as on-site coordinators at Duke and Crisis Assessment workers at the Lincoln Community Health

facility, but the reach is far too short and exceedingly limited in scope[19, 46]. The amount of resources provided simply does not cover the needs of the community.

Limitations of State-funded Mental Health Services for Adults with SPMI

While there is much that can be done to improve the state-funded mental health services in Durham, there are also limitations to its reach. Even with limitless funds for treatment, there would remain issues within the SPMI population. The greatest of these, that affects all aspects of mental illness, is the social stigma attached to mental health treatment. Unlike other medical conditions, mental health is often viewed as another entity, outside of the realm and compassion of traditional medicine. Additionally, there is very limited conversation that occurs outside of the treatment circle, and even then the conversations can carry a great deal of shame, embarrassment, and confusion[10]. Until more is done to erode this social position, the treatment options that are provided will reach a limited audience. The main reason for this being that if those suffering from mental illness are either not informed, or too ashamed to seek treatment, there is little mental health services, state-funded or otherwise, can to do assist; that is, until medical or judicial necessity requires it. Also, Mental Illness is unique in that a symptom of severe mental illness can be the belief that they are not ill or paranoia about treatment and the system [18, 23].

There are some efforts in place throughout Durham that affect the stigma of mental health treatment, but they are limited in scope. Partnership for a Healthy Durham holds an annual Recovery Celebration Block Party that aims to both encourage those with mental and substance abuse illness in their success, and also to raise community awareness of the issue. Durham also has a social media presence for mental health awareness but its reach is limited[14]. More can be

done on this front, particularly in outreach programs within the public schools. In this manner State-funds can have an impact on mental health education efforts by providing an awareness campaign to children, as well as implementing an early detection screening process for mental illness. Similar programs are in place for early detection of learning disabilities, and enacting such a program for mental illness would have a similarly beneficial effect on outcomes[26].

Findings/Results:

Results of Scoring/Categorization of Selected Articles

As it was mentioned, the Literature Review of mental health services in Durham was split into several topics in an effort to ensure that the most impactful and relevant information was extracted from an otherwise very large pool of information. For the sake of brevity only those articles that, according to the previously mentioned Methodology section, scored overall as a 10 (ten) or higher were selected for comparison. In further research on the topic it may be beneficial to take a deeper dive into any one of the chosen sub-topics of Durham's publicly funded mental health services.

Like many areas in the United States, North Carolina, as well as Durham County, suffers from a lack of sufficient and consistent funding for mental health services [15, 38]. America's Health Rankings lists North Carolina at 22nd overall in mental health, and while that is in the top half of states, National Alliance on Mental Health (NAMI), as well as several scholars, are concerned that North Carolina will fall behind in providing adequate mental health services [8, 18, 38]. This concern is based on several factors including an increased burden due to population growth, poor economic conditions that have left many uninsured, and state government that has not kept funding to Medicaid guaranteed.

Along with these institutions, Kessler is concerned that mental health related costs are being shifted to other sectors, such as emergency medicine and the justice system, rather than being appropriately funded [31]. The Kaiser Foundation also has expressed concern that without improved funding, conditions within state institutions will deteriorate and those most vulnerable will be left without necessary services [37].

An additional challenge that was noted by The Center for Disease Control (CDC) and the Agency for Healthcare Research and Quality is the lack of accountability and measurable success with the level of data currently collected by the state and federal government [9, 34]. Without solid data to analyze on mental health programs, specifically on how effective they are at maintaining treatment, it is difficult for agencies to develop the dynamic yet efficient mental health services that communities require [29]. Durham's State of the County Report also indicated the need for more robust tracking and reporting, specifically for tracking pilot programs for the city's youth and most at-risk populations [14, 20].

Literature from both local and Federal organizations indicates that maintenance services are not entirely supported and that this gap in coverage leaves many individuals, especially those within the SPMI population who are in need of sustained support, without the resources they need to treat their condition [15, 16, 32]. One researcher likened this treatment strategy to stabilizing a diabetic patient only to then not send them home with insulin or a blood sugar monitor [21]. The result should be unsurprising when the patient returns to the hospital but mental health conditions are often addressed in this incongruous manner [23, 25, 32]. Several researchers, including Conner and Roszak, expressed frustration as they view the current system as more reactionary than preventative in its approach, with limited effectiveness at

managing long term care [39, 40]. It is argued that along with inconsistent and unaccountable funding, systemic challenges such as gaps in the continuum of care and social stigmas such as fear of judgement and shame, all contribute toward why mental health services are managed and viewed differently than other ailments [41, 42, 52, 53, 55].

While there are some efforts to detect mental illness early, several prominent government agencies, as well as independent researchers, agree that more needs to be done [9, 14, 26, 56]. National Alliance on Mental Illness, CDC, NAMI, and others all support efforts to conduct early screening in schools in hopes of earlier interventions that may result in better health outcomes for those afflicted [9, 18, 43, 44]. There is concern that without comprehensive screening that many affected individuals will not be identified until after a critical mental health episode. While there is a public perception that those suffering from mental illness are dangerous to the general population, researchers have shown the opposite. The greatest danger these individuals pose is to themselves [51, 54]. Bridging this gap in awareness is has been advocated by V.A. Hiday, as well as several mental health advocacy agencies [26, 27, 43]. The literature also supports considerably more education and outreach for mental health awareness which includes community outreach programs that educate the general population on available services, normalizing treatment, and what "good mental health" looks like [14, 18, 56]. North Carolina Institute of Medicine has also advocated for additional training for service providers on their role within the system and how they can provide the best possible care to their clients [32].

Major Findings from Interviews

Several interviews were conducted with key stakeholders within the mental health community. This included both those that provide or manage services as well as those that receive mental

health services in Durham County. There were several overlapping themes across all stakeholders, though there was a noticeable difference in perspective between providers and recipients.

All interviewees agreed that more funding is needed for mental health services in Durham. Interviewees were split on whether those funds would best be utilized by going toward expanding services or improving on the current services, with more providers supporting improving current services. For those within the provider group, many felt they were not well compensated for their work and that unrealistic caseloads were placed upon them.

Along with funding, another major theme to come out of the stakeholder interviews was a need for more education, training and community outreach. It was suggested by stakeholders that additional education and training would be beneficial for the provider community so they could better support their clients. Several felt they were ill equipped to handle the variety and complexity of cases they consistently were presented. Covering multiple job functions, often without adequate training, was suggested as being somewhat common, with quality of care suffering because of the lack of appropriate training for those additional roles.

Those receiving treatment for mental health services were more likely to say that expanded services were needed, though both groups agreed that waitlist times were too long and in most cases getting worse. It was agreed also that those within the SPMI community were more likely to have long wait times for treatment.

All stakeholders did not agree with the best management system to implement. While some felt that management care organizations were working well, others felt there is an over-importance on outcomes and the treatment of “easy to fix” patients, with difficult cases not

receiving adequate attention or otherwise being neglected. This sentiment was echoed by some of those interviewed that receive mental health care in Durham. For their part, patients did not have a preferred management system, possibly out of a lack of knowledge regarding the different options, but all agreed that more needed to be done by administration to provide higher quality care to patients, specifically in terms of wait times for services.

Conclusion: Recommendations

The literature review has demonstrated the following problems and recommendations within the state-funded mental health system in Durham:

I. Funding

a. Predictable/Stable Long-term Funding

One of the best things that can be done to support state-funded mental health for adults with SPMI is to provide sustained funding. Services that are unpredictably and chronically underfunded and limited by managed care systems are inevitably going to be inefficient and less effective. As such, providing more stability to the budgets of the funding for mental health services, specifically those for long term care, would improve both the quality and access of services available to not only the SPMI community, but all those in need of mental health support [26, 28, 42]. Furthermore, data has proven that the cuts that are made to services when fiscally conservative decisions are made are actually anything but financially responsible[16, 18, 39, 42]. These measures end up merely shifting the responsibility of services to other publicly funded service sectors such as emergency medicine or the justice system, and inevitably at a higher cost than if they were addressed within the public and mental health sectors [38, 42, 44].

b. Improved Accountability of Provided Services

At the same time, to ensure resources that support adults with SPMI are best allocated, there must be accountability within the services provided. With state-funds being utilized, tax payers deserve to know that the most effective services are being provided that will decrease the chance of an escalated need for services or otherwise prevent crisis within the SPMI community. The literature suggests that this effort should be supported by providing better and more transparent data on the services provided and their ongoing quality of care [32, 52]. Providing this more in-depth data will also help substantiate the on-going and sustained public funding of these mental health services by clearly demonstrating the positive outcomes they provide [16, 18, 38]. In order to provide the most accurate data possible, these reporting efforts will take the cooperation of state and federal government, as well as the management care institutions that provide first tier services to the SPMI community [18, 32, 33].

II. Access to Services

a. Adequate Emergency & Maintenance Services

Providing adequate funding for mental health services of the SPMI community would also ensure that in-patient beds for psychiatric treatment are available, especially for those in need of long-term care. Within North Carolina there remains a need to expand the available bed count, but with a history of eliminations and a rapidly growing population, the current bed count expansions are not able to keeping up with demand[40]. Additionally, there is a huge lack of residential community supported living options for people with SPMI to step down into after hospitalization [14-16, 19]. Supporting greater living options through expanded voucher programs and ensuring that landlords do not enact discriminatory practices against the SPMI population would help [19, 46, 47, 50].

b. Increased Maintenance Services and Coordinated Care

Additionally, services for adults with SPMI are continually threatened, and managed care requirements do not match the needs of those with chronic SPMI, so receiving adequate community services that are necessary for independent living can be inconsistent and a challenge to procure [16, 50]. When these gaps exist it leaves few options for those with need, and thus further strains the in-patient beds that are available[41]. Conversely, supporting greater expansion of community support services such as around the clock crisis hotlines, mobile crisis teams, as well as expanded case management and coordinated primary health care with mental health care, would reach those in need earlier in intervention, preventing ER visits, hospitalization or incarceration, and decrease the burden on in-patient facilities, emergency department and the justice system [18, 20, 42, 52].

III. Community Health

a. Research on Early Detection

Along with expanded treatment for those living with SPMI, it would be beneficial to dedicate more resources toward identifying those suffering from mental illness at an earlier age such as intense programs for young people after the first diagnosis of a psychotic disorder [26, 44, 54]. It's largely accepted that the average individual suffers for eight to ten years before being treated for a mental illness[43]. This abyss between onset of their condition and treatment can have immense cost to both the individual and their community [35].

b. Mental Health Screening in Schools

Additionally, more research and training is needed on early detection of mental illness so that professionals can correctly identify those suffering when presented with their cases. These

educational efforts would be best provided to not only mental health professionals but also hospital staff, emergency responders, primary care providers, school counselors, teachers, and community leaders [14, 20]. The advanced screening procedures that are being advocated for would best be implemented as a standard across all school age children as an effort to make early intervention of mental illness [41, 51]. There have been repeated calls from organizations and thought leaders, such as National Alliance on Mental Health, for this type of screening process because of the positive impact early detection can have on outcomes and effective management[44, 45].

c. Community Education/Awareness

The issue of social stigma associated with mental illness and the lack of social acceptance for those living with SPMI is a real hurdle against those afflicted getting the help they need [25, 52, 55]. Further development and expansion of programs that educate the public on mental health, and help decrease the barriers from treatment would be an immense help toward getting those suffering the help they need [19, 25]. Unfortunately mental illness is not viewed with the same support as other ailments such as heart disease or cancer and providing more outreach and support for mental health causes, in an effort to bringing awareness to the issues facing those living with mental illness, would help reduce the stigma [20, 55]. As it stands, the social barriers and lack of education are real impediments toward the treatment of mental illness and while Durham supports some mental health outreach efforts, such as the Partnership for a Healthy Durham's Recovery Celebration block party, more can and should be done [19, 54, 55].

Appendix A: Questionnaire for Mental Health Professionals / Patients

Related to Mental Health, in general:

1. In your opinion, what are the top three issues facing Medicaid and State funded mental health services for adults in NC?
    a. What are the main obstacles toward improving these issues?

Related specifically to Durham County, NC:

1. How would you describe and rate access to Medicaid and State funded services for adults who have a mental illness?
    a. Are some populations better served than other in this system? For example, people with the most severe and chronic needs or Serious and Persistent Mental Illness (SPMI) compared to people with mild to moderate needs.
    b. In your opinion, how can access to Medicaid and State funded services be improved? In a perfect world what would you suggest?
2. How would you describe and rate quality of mental health services?
    a. How, if at all, does this differ from access for people with the most severe and chronic needs or Serious and Persistent Mental Illness (SPMI) population?
    b. In your opinion, how can it be improved? In a perfect world what would you suggest?
3. What would you say are the top three issues facing Medicaid and State funded mental health services specifically in Durham County?
4. During your tenure, what has improved in Medicaid and State funded mental health services for Durham County?
5. During your tenure, what has degraded in Medicaid and State funded mental health services for Durham County?
6. Any other comments or suggestions?

Appendix B: Literature Review Table:

Topics:

- Defining Population/Issue
- Utilization/Access
- Quality of Care
- Special Issues for SPMI population: Chronic physical health issues, substance abuse, homelessness, social stigma, etc

Article Name	Author	Source of Publication	Topic	At-Risk Population	Impact (1-10)	Relevance (1-10)	Total Article Score (2-20)
County Health Rankings—Durham County	University of Wisconsin Population Health Institute	County Health Rankings.org	Defining Population/Issue	General	7	7	14
American Community Survey	US Census Bureau	census.gov	Defining Population/Issue	General	4	4	8
Poor Mental Health Days, North Carolina	America's Health Rankings	Americas Health Rankings.org	Defining Population/Issue	General	3	5	8
Behavioral Risk Factor Surveillance Survey Results	Centers for Disease Control and Prevention	schs.state.nc.us	Defining Population/Issue	General	7	8	15
Mental Health Basics	Centers for Disease Control and	cdc.gov	Defining Population/Issue	General	6	4	10

	Prevention						
State Financial Conditions and Medicaid	Kaiser Commission on Medicaid and the Uninsured	kff.org	Defining Population/Issue	General	6	6	12
The Impact of the State Fiscal Crisis on State Mental Health Systems	T. Lutterman	NASMHPD Research Institute	Defining Population/Issue	N/A	9	8	17
Article Name	**Author**	**Source of Publication**	**Topic**	**At-Risk Population**	**Impact (1-10)**	**Relevance (1-10)**	**Total Article Score (2-20)**
2013 State of the County Health Report	Partnership for a Healthy Durham	Healthy Durham.org	Utilization/Access	General	7	9	16
NC budget cuts $110 million from regional mental health	Bonner, Lynn	newsobserver.com	Utilization/Access	General	8	7	15
State Mental Health Cuts: A National Crisis	National Alliance on Mental Health (NAMI)	nami.org	Utilization/Access	General	9	8	17
County Specific Snapshots	NCDHHS	ncdhhs.gov	Utilization/Access	General	8	9	17

for NC Medicaid Services							
Medical Assistance, Behavioral Health Services	NC DHHS	dma.ncdhhs.gov	Utilization/Access	General	8	8	16
Prevalence and Treatment of Mental Disorder: 1990 to 2003	R.C. Kessler et al	New England Journal of Medicine	Utilization/Access	General	8	7	15
Healthy North Carolina 2020 Technical Report	The North Carolina Institute of Medicine (NCIOM)	www.nciom.org	Utilization/Access	General	9	9	18
Assessing the Economic Costs of Serious Mental Illness	Insel, T.R.	The American Journal of Psychiatry	Utilization/Access	General	8	9	17
Increasing Health Insurance Costs and the Decline in Insurance Coverage	Chernew, M., Cutler, D. M., & Keenan, P. S.	doi.org	Utilization/Access	General	8	9	17
Article Name	**Author**	**Source of Publication**	**Topic**	**At-Risk Population**	**Impact (1-10)**	**Relevance (1-10)**	**Total Article Score (2-20)**

Community Health Action Plan	Durham County Public Health	healthydurham.org	Quality of Care	General	9	9	18
Durham County Community Health Assessment	Durham County Public Health	healthydurham.org	Quality of Care	General	7	8	15
County Specific Snapshots for NC Medicaid Services	NCDHHS	ncdhhs.gov	Quality of Care	General	7	9	16
Recommendations on Screening for Depression in Children and Adolescents	U.S. Preventive Services Task Force	uspreventiveservicestaskforce.org	Quality of Care	Social Stigma	9	7	16
Cost of Supervision	North Carolina Department of Public Safety	doc.state.nc.us	Quality of Care	General	5	7	12
HCUP Facts and Figures: Statistics on Hospital-based Care in the United States	Agency for Healthcare Research and Quality	Department of Health & Human Services	Quality of Care	General	7	7	14
Delay and failure in treatment seeking after first onset of	WANG, P. S., ANGERMEYER, M., BORGES, G., BRUFFAERTS,	World Psychiatry	Quality of Care	General	7	7	14

mental disorders in the World Health Organization's World Mental Health Survey Initiative	R., TAT CHIU, W., DE GIROLAMO, G						
Mental Health Screening	National Alliance on Mental Illness	nami.org	Quality of Care	Social Stigma	8	7	15
Mental Health Screening and Early Intervention in Schools	M. Lerner	California Department of Public Schools	Quality of Care	Social Stigma	9	7	16
Crisis Solution Initiative	DHHS	ncacdss.org	Quality of Care	General	7	8	15
Article Name	**Author**	**Source of Publication**	**Topic**	**At-Risk Population**	**Impact (1-10)**	**Relevance (1-10)**	**Total Article Score (2-20)**
Substance Use and Abuse in Durham County	Duke Center for Child and Family Policy	childandfamilypolicy.duke.edu	Special Issues for Adults with SPMI	Substance Abuse	6	7	13
Mental Health: Culture, Race, and Ethnicity: A	National Institute of Mental Health	ncbi.nlm.nih.gov	Special Issues for Adults with SPMI	General	6	6	12

Supplement to Mental Health: A Report of the Surgeon General							
Physical illness in patients with severe mental disorders. I. Prevalence, impact of medications and disparities in health care	M. De Hert, C. Correll, J. Bobes, et al.	World Psychiatry	Special Issues for Adults with SPMI	Chronic Health	9	8	17
Morbidity and Mortality in People with Serious Mental Illness	National Association of State Mental Health Program Directors Council	nasmhpd.org	Special Issues for Adults with SPMI	Chronic Health	9	7	16
Results from the 2014 National Survey on Drug Use and Health: Mental Health Findings	Substance Abuse and Mental Health Services Administratio n	samhsa.gov	Special Issues for Adults with SPMI	General	7	7	14
Attitudes Toward Mental Illness – 35	Centers for Disease Control and	cdc.gov	Special Issues for Adults with SPMI	Social Stigma	7	6	13

States, District of Columbia, and Puerto Rico	Prevention						
Putting Community Risk in Perspective: a Look at Correlations, Causes and Controls	V. Hiday	International Journal of Law and Psychiatry	Special Issues for Adults with SPMI	Social Stigma	6	6	12
Assessing the evidence of a link between mental illness and violence	E. Mulvey	Hospital and Community Psychiatry	Special Issues for Adults with SPMI	General	6	6	12
Congruencies in Increased Mortality Rates, Years of Potential Life Lost, and Causes of Death Among Public Mental Health Clients in Eight States	C. Colton, R. Manderscheid	Preventing Chronic Disease: Public Health Research, Practice and Policy	Special Issues for Adults with SPMI	Chronic Health	8	7	15
Criminal History Reform	The Papillon Foundation	papillonfoundation.org	Special Issues for Adults with SPMI	General	6	5	11
Community housing for	G. Akland	News and	Special Issues for	General	8	8	16

the mentally ill still scarce despite NC pledge		Observer	Adults with SPMI				
The poor physical health of people with mental illness	D. Osborn	Western Journal of Medicine	Special Issues for Adults with SPMI	Chronic Health	8	8	16
Article Name	**Author**	**Source of Publication**	**Topic**	**At-Risk Population**	**Impact (1-10)**	**Relevance (1-10)**	**Total Article Score (2-20)**
Disadvantaged Children and Families in Pediatric Primary Care Settings: I. Broadening the Scope of Integrated Mental Health Service	Kenneth J. Tarnowski	Journal of Clinical Child Psychology	Mental Health Access	Children	8	7	15
Risk and resilience: Implications for the delivery of educational and mental health services in schools	Beth Doll	School Psychology Review	Mental Health Access	Children	6	5	11
Mental Health Problems, Use of	Charles W. Hoge	The Journal of American Medical	Use of Services	Veterans	7	7	14

Mental Health Services, and Attrition From Military Service After Returning From Deployment to Iraq or Afghanistan		Association					
Improving Access to Geriatric Mental Health Services: A Randomized Trial Comparing Treatment Engagement With Integrated Versus Enhanced Referral Care for Depression, Anxiety, and At-Risk Alcohol Use	Stephen J. Bartels	The American Journal of Psychiatry	Mental Health Access; Substance Abuse	Elderly	5	5	10
Who Is at Risk of Non-detection of Mental Health Problems in Primary	Steven J. Borowsky	Journal of Internal General Medicine	Defining Population	General	7	7	14

Care?							
Prevalence and Risk Factors for Homelessness and Utilization of Mental Health Services Among 10,340 Patients With Serious Mental Illness in a Large Public Mental Health System	David P. Folsom	The American Journal of Psychiatry	Utilization & Risk Factors	Homeless	6	7	13
Cone Health Foundation Meta-Analysis of Reports on Substance Abuse and Mental Health	NPH Consulting LLC	Cone Health Foundation	Substance Abuse; Access; Utilization	General	9	9	18
Analysis of Service Gaps in the Mental Health, Developmental Disabilities and Substance Abuse Service	NC Department of Health and Human Services, Division of Mental Health, Developmental	NC Department of Health and Human Services	Access to Service; Substance Abuse	Developmental Disabilities	8	9	17

System	Disabilities, and Substance Abuse Services						

Appendix C: Utilization/Cost of Mental Health Services in Durham

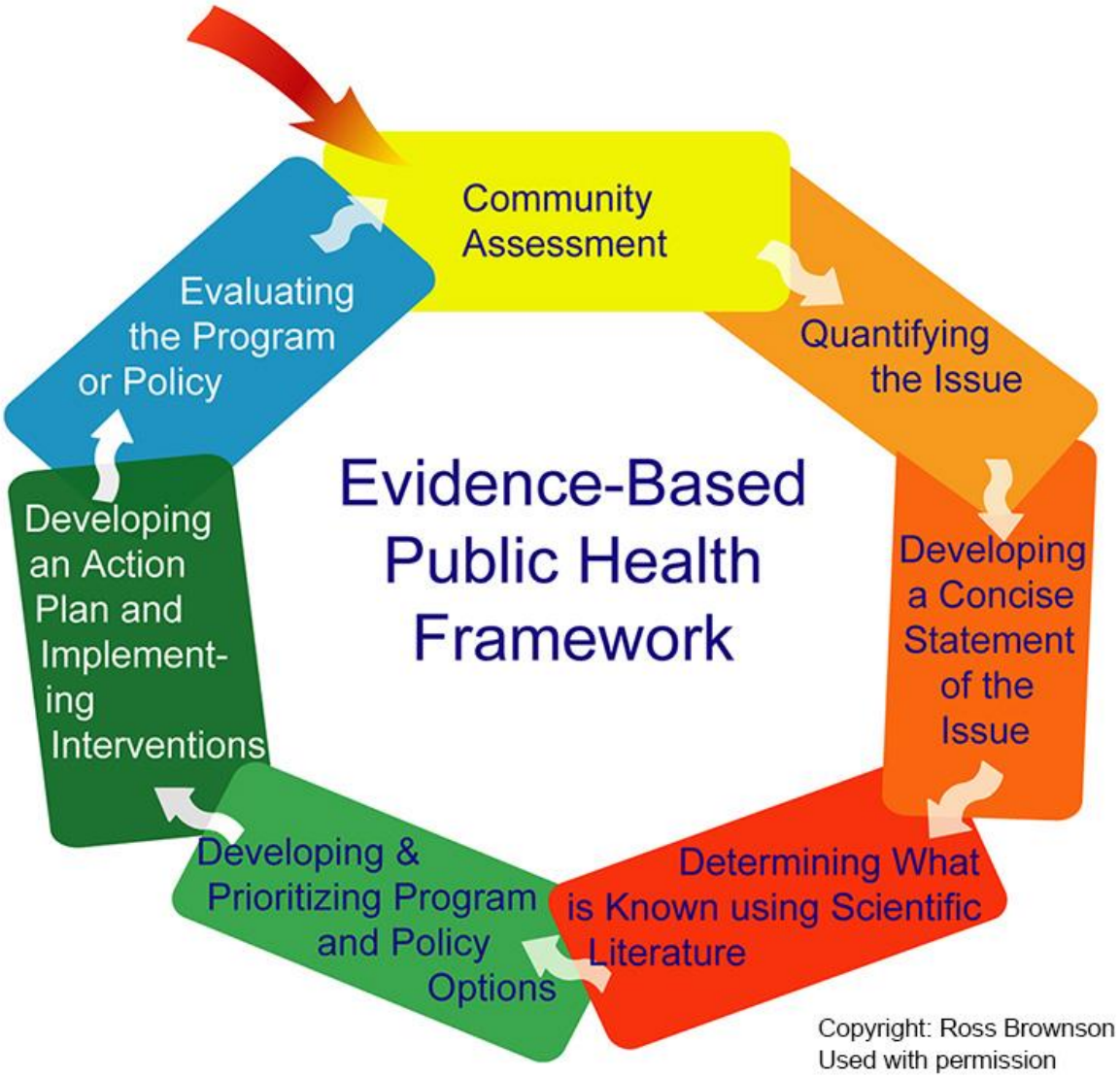
Durham County Mental Health Utilization, Number of Recipients Receiving Services for SFY2010				
Type of Services	Recipients	Costs	Avg Cost per Recipient	Avg Cost per Recipient Statewid
COMMUNITY SUPPORT	2,500	$9,199,374	$3,680	$3,896
OTHER ENHANCED SERVICES	4,211	$47,166,125	$11,201	$7,401
OUTPATIENT THERAPY	972	$775,319	$798	$852
OTHER DD SERVICES	2,500	$31,963,540	$12,785	$13,476
SUBSTANCE ABUSE	1,136	$3,137,325	$2,762	$1,590
OTHER SERVICES	8,053	$25,663,520	$3,187	$2,606
TOTAL	**19,372**	**$117,905,203**	**$34,413**	**$29,821**

Medicaid Eligibles by Age or Group, County Compared to State Totals for June 2010

	Total Medicaid Population	Total Population	Medicaid Elig, as % of Population
County	41,719	267,587	16%
Statewide	1,577,121	9,543,537	17%

Average Annual Enrollee Cost		
	County	State
Adult	$9,119	$7,256
Child	$3,531	$2,811

Appendix D: Evidence-based Public Health Framework



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Interviews:

- Interview #1 – employee of The Division of State Operated Health Care Facilities, Central Regional Hospital, North Carolina Department of Health and Human Services on March 8th, 2016.
- Interview #2 – employee of The Division of State Operated Healthcare Facilities, Central Regional Hospital, North Carolina Department of Health and Human Services on March 10th, 2016.
- Interview #3 – employee of The Northern Piedmont Community Care, Duke Division of Community Health, Department of Community and Family Medicine on March 11th, 2016.
- Interview #4 – employee at The Center for Child and Family Health on March 13th, 2016.
- Interview #5 – employee at Mental Health America of the Triangle on March 18th, 2016
- Interview #6 – patient at Durham County Department of Health and Human Services, Mental Health, Developmental Disabilities, and Substance Abuse Services Division on March 21st, 2016.
- Interview #7 - patient at Durham County Department of Health and Human Services, Mental Health, Developmental Disabilities, and Substance Abuse Services Division on March 21st, 2016.
- Interview #8 - patient at Durham County Department of Health and Human Services, Mental Health, Developmental Disabilities, and Substance Abuse Services Division on March 21st, 2016.